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in the mild valleys of Tennessee; but it does seem to make the red man and the animal contemporaries.

D. G. BRINTON.

UNIVERSITY OF PENNSYLVANIA.

SCIENTIFIC NOTES AND NEWS.

LORD KELVIN.

THE jubilee of Lord Kelvin's professorship was celebrated by the University of Glasgow, and the corporation of the city on June 15th, 16th and 17th. More than two hundred delegates were present, representing British and foreign universities and learned societies, and congratulatory messages and telegrams were sent from all parts of the globe. At a conversazione in the University on the evening of June 15th Lord Kelvin's numerous inventions and the diplomas, medals, addresses, etc., presented to him by various scientific and other learned societies, were exhibited, and more than two thousand guests offered their congratulations to Lord and Lady Kelvin. A cablegram from the University was sent by way of San Francisco and traversed the circuit of 20,000 miles in $7\frac{1}{2}$ minutes. On the morning of June 16th numerous addresses were presented to Lord Kelvin and the degree of LL.D. was conferred upon him and on several of the distinguished guests, including Prof. Simon Newcomb and Prof. Cleveland Abbe. A banquet was given by the corporation in the evening, and on June 17th there was an excursion on the Firth of Clyde.

Prof. A. Gray writes to *Nature*: "As these words are being printed, the Jubilee of Lord Kelvin's professorship is being celebrated in the most enthusiastic and magnificent manner at Glasgow. Delegates from all parts of the world are present, and among them are many of the most eminent representatives of science at home and abroad. From Paris to Moscow, Canada to Mexico, India to Australia, the whole civilized world unites in congratulating Lord Kelvin on the great work for science and the good of his fellow men which he has achieved, and in offering good wishes that he may have health and strength for the continuance of his glorious career. Though for fifty years he has been

professor of natural philosophy at Glasgow, has seen pass through his classes several generations of students, has been one of the greatest leaders in what has been preëminently a century of scientific discovery and advancement, has worked as few men can work, and withal has taken the keenest interest in all that ought to interest the true citizen of a great country, yet is his eye not dim nor his natural force abated. It is the hope of all his friends and of all the great army of scientific workers who now are unanimous in doing him honor that he may have before him many long years of happy and successful work." All American men of science will join in offering their most sincere congratulations, for there is no one living when they honor more highly than Lord Kelvin.

THE TEACHING OF ANATOMY.

THE last number of the *Bulletin of the Johns Hopkins University* (May-June, 1896) contains interesting accounts of the anatomical courses and laboratories of the University, including the work on normal histology and microscopic anatomy and the photographic room and apparatus. The articles are illustrated by ground plans and photo-engravings and deserve careful study by those engaged in teaching anatomy or indeed any natural science. Prof. Mall holds that anatomy should be taught in the dissecting room and not by lectures. He writes:

"I have asked many professors, even of anatomy, where they had learned their anatomy, and in nearly all cases the reply was 'in the dissecting room.' They all admitted that, in addition to demonstrations, lectures were of little use to students, and some believed them worse than useless. The zoologists and botanists have long ago learned the absurdity of the lecture method of teaching, but the anatomist patiently keeps up this slow and stupid method of instruction. It is stupid because no anatomist would use this same method if he were to learn instead of to teach.

"We know very well that the burden of responsibility is removed, to a great extent, if the instructor goes over the whole subject carefully once a year. He then can tell his student to go to the dissecting room to see for himself.

If the student does not attend the lectures, the professor carries no responsibility, no matter how uninteresting or how uninstructive they may be. Yet the beauty of the courses of lectures is that the professor carries no responsibility if the student does not know his anatomy.

"I believe that there is but one way to learn any subject, and that is through study. The very name *student* tells what the person so named should be doing; and with a natural science, dealing with a most complex object, extending through the three dimensions of space, any other method besides studying the object itself is practically useless.

"Lectures with demonstrations are certainly valuable—more valuable than the lectures with text-books alone. Yet analyzing the object itself is infinitely more valuable than to watch the results exposed by another. Wrestling with the part which is being studied, handling it and viewing it from all sides, and tabulating and classifying the parts worked out, give us the greatest reward. All this may be accomplished by practical laboratory work. If we can make the student work thoughtfully and carefully a great result is achieved. It makes of him an artist, an actor, an expert, not a dilettant. He is upon the stage, not in the audience."

GENERAL.

THE degree of LL. D. has been conferred by Harvard University on Prof. Alexander Graham Bell, of Washington; on Prof. William R. Ware, of Columbia University, and on Prof. William G. Farlow, of Harvard University; by the University of Michigan on Prof. E. L. Mark, of Harvard University, and by Amherst College on Prof. C. H. Hitchcock, of Dartmouth College.

THE discovery of Rayleigh and Ramsay is being extended into unexpected fields of research. Wm. Schlesing (fils) and Jules Richard have recently read before the French Academy a paper in regard to researches upon Argon in the gas within the swim-bladders of fishes.

THE national collection of plants placed many years ago by the Smithsonian Institution in the custody of the Department of Agriculture has been returned to the Institution by

Secretary Morton, who is unwilling longer either to be responsible for work in botany, except as related directly to agriculture, or to keep so valuable a collection in a building which is not fire proof. It is now arranged in the east balcony of the National Museum building. The following members of the museum staff are assigned to the Department of Plants: Curator of Plants, (Honorary) Mr. F. V. Coville, Botanist of the Department of Agriculture. Assistant Curators, Dr. J. N. Rose, Mr. O. F. Cook, Mr. Charles Louis Pollard. Aid, Mrs. Carrie Harrison. Clerk, Miss Flora N. Vasey. Mounters, Mrs. Anna T. Moore, Miss Louise Zimmerman, Miss Frederica Wernheimer, Miss L. V. Schaeffer. Messenger, Felix Moore.

AN International Congress of Maritime Fisheries, Oyster culture and Marine Agriculture will be held September 3d to 7th at Sables d'Olonne, in Vendée, under the auspices of the Society *L'Enseignement Professionnel et Technique des Pêches Maritimes*. M. E. Perrier, of the Institute, professor in the Museum of Natural History in Paris, will preside.

Observations sur les prestidigitateurs by Joseph Jastrow, an article translated from SCIENCE, appears in the *Revue Scientifique* for June 20th.

PROF. S. P. LANGLEY sailed for Europe on July 8th, for a two months' stay.

DR. C. A. DOREMUS, of New York City, has been appointed, by the Secretary of State, delegate from the United States to the International Congress of Applied Chemistry in Paris.

Garden and Forest states that the old home of the naturalist Audubon, in Pennsylvania, is on the south bank of the little River Perkiomen, about three miles to the eastward of Phoenixville. The house, which is locally famous as the Mill Grove House, was built nearly a century and a-half ago, and stands on a knoll which affords a fine prospect. It is of stone, solid and substantial, thickly overgrown with ivy and shadowed by a number of tall pines, under the branches of which Audubon produced some of his best work. In spite of certain interior changes, the chimney-corner where his studying was done still remains as he knew it.

THE NEW YORK *Evening Post* states that some changes in the competitive system of appointment as related to the scientific bureaus of the Department of Agriculture are now under consideration, and may be announced in a few days. The system of special examinations for scientific positions has not proved satisfactory. It is said that besides being troublesome and expensive these examinations put a premium upon the narrowly educated specialist and do not sufficiently recognize experience and intellectual breadth. The reforms proposed are a permanent list of eligibles, based on lines of broader scientific training and a longer period of apprenticeship for those who are taken into the scientific bureaus, so that the higher positions need never be filled directly from the special examination, but by promotion on basis of examination of tried assistants.

D. VAN NOSTRAND & Co. announce for publication in August a work on *Röntgen Rays and Phenomena of the Anode and Cathode*, by Edward P. Thompson, assisted by Louis M. Pignelet, N. D. C. Hodges and Ludwig Gutmann, with a chapter on Generalizations, Arguments, Theories, Kindred Radiations and Phenomena, by Prof. Wm. A. Anthony.

THE next meeting of the American Microscopical Society will be held at Pittsburg, Pa., August 18, 19, 20, 1896, under the presidency of Prof. A. Clifford Mercer, of Syracuse, N. Y. The meeting, which promises to be of special interest, will be held in the Carnegie Library Building. It is hoped that there will be a full attendance of members, as the question of having a permanent home in which the accumulated property of the Society is to be considered. Membership blanks and general information regarding the Society may be obtained from the Secretary, Prof. W. C. Krauss, 382 Virginia street, Buffalo, N. Y.

THE United States Civil Service Commission will hold an examination in Washington and other cities where there are applicants, on July 30th, to fill a vacancy in the position of assistant in the division of chemistry, Department of Agriculture, at a salary of \$1,200 per annum; also an examination on August 13th and 14th to fill a vacancy in the position of botanical

artist, Department of Agriculture, at a salary of \$1,000 per annum.

MR. FLINDERS PETRIE has been appointed executor-in-chief of the Egypt Exploration Fund, and the work will doubtless be prosecuted with vigor under his administration.

WILLIAM T. BRIGHAM, of Honolulu, left for Washington June 26th, to visit the Smithsonian Institution. He is director of the Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History at Honolulu, left the latter place last Janury, and has been making a tour around the world for the purpose of studying the chief ethnological exhibits in various countries. He has been especially interested in studying the marine zoological stations at Naples, Berlin, Amsterdam and Portsmouth, as he expects to organize a marine zoological station near Honolulu for the Hon. Charles R. Bishop, Vice-President of the Bank of California. The proposed new station, he says, will cost three-quarters of a million dollars.

WE learn from the *Revista de la Instrucción Pública Mexicana* that a law is being considered by the Mexican Chamber of Deputies making all the archæological monuments and remains in the country the property of the nation and forbidding their exploration, restoration and removal without express authorization of the executive. The archæological map of the republic is to be revised, the monuments are to be examined, and as much of the material as possible is to be preserved in the National Museum. It is to be a penal offence to injure the remains or to export them from the country without legal authorization.

SIR JOHN EVANS has presented to the London Geological Society an oil portrait of Huxley.

THE steam yacht Ohio sailed for Norway on June 27th, with two hundred passengers, including a number of men of science, to observe the total eclipse of the sun at Bado.

IN order to encourage kite-designing and kite-flying, the Boston Aéronautical Society offers for the best kites, cash prizes amounting to one hundred and fifty dollars. The competition is to take place between September 15 and October 15, 1896. Octave Chanute, Esq., offers, through this Society, a special prize of one hun-

dred dollars for the best Monograph on the Kite, giving a full theory of its mechanics and stability, with quantitative computations appended. Further information may be obtained from the Secretary, Mr. A. A. Merrill, P. O. Box 1197, Boston, Mass.

MR. ROBERT M. PIRS, 320 E. 14th street, New York, will, beginning with July, edit and publish a quarterly journal entitled *Journal of Communication*, devoted to linguistic, metric and numeric progress.

THE *Atlantic Monthly* for July contains an interesting article by Mr. John Fiske, entitled 'The Century's Progress in Science.'

MAJOR J. W. POWELL will be engaged during the summer on a scientific expedition to the coast of Maine, for the purpose of studying the shell mounds.

WE learn from *Nature* that a preliminary meeting has been held in Liverpool for the purpose of taking steps for the establishment in that city of a Zoological Garden on a scientific basis, and on the model of that in Regent's Park, London. On the motion of Prof. Herdman, seconded by Dr. Forbes, the following resolution was unanimously adopted: "That in the opinion of this meeting it is desirable, in the interests of science and education in this city, to establish Zoological Gardens, containing a collection of living animals, and that those present form a committee, with power to add to their number, for the purpose of advancing this object." The question of a site was considered, and it appeared that there was just now a favorable opportunity of securing land in a central position very suitable for the purpose. It was resolved that the following gentlemen be asked to form a sub-committee to inquire fully into the matter and prepare a report: Prof. Herdman, Dr. Forbes, Messrs. A. L. Jones, A. A. Paton, A. S. Hannay, W. H. Picton, W. E. Willink, F. J. Leslie and F. Radcliffe.

THE Macmillan Co. will issue shortly an Elementary Solid Geometry by Prof. Henry D. Thompson, of Princeton University.

THE Council from the London Mathematical Society has awarded the De Morgan Medal to Mr. Samuel Roberts.

IN a paper presented before the London Physical Society on June 12th Prof. S. P. Thompson stated that he had been unable to obtain true reflection of the Röntgen rays, though most bodies, including air, gave diffuse reflection.

LORD KELVIN calls our attention to the fact that in a letter to the London *Times*, subsequent to the one quoted in our issue of May 22d, he added the sentences: "The weight of a cubic-mètre of water is a French ton. The cubic-decimètre of waters weighs a kilogramme, the cubic centimètre, a gramme." These sentences may be added at the middle of the second line at the top of the second column of page 166 of the last volume of this JOURNAL.

THE *International Medical Magazine* for June contains articles on X-ray photography in its application to medicine by Prof. Arthur W. Goodspeed, Prof. W. W. Keane and Dr. Thomas G. Morton. The articles are illustrated by ten full-page plates showing the details of the skeleton in health and disease with remarkable clearness. In the photographs of the trunk and pelvis taken by Prof. Goodspeed, the cervical vertebrae, the articulations of the shoulder joint, etc., are shown with as great clearness as the bones of the hand in the earlier experiments.

THE bill permitting the use of horseless carriages on highways in Great Britain has passed the House of Lords, but it is feared that the pressure of business before the House of Commons will prevent the bill from becoming a law before the vacation. In the meanwhile several companies have been incorporated for the manufacture of horseless carriages, one with a capital of \$5,000,000.

UNIVERSITY AND EDUCATIONAL NEWS.

THE University of Vermont dedicated, on June 23d, two new buildings, Converse Hall, a dormitory presented to the University by John H. Converse at a cost of \$125,000, and a science building presented by Dr. Edward H. Williams which, with its equipment, will cost about \$200,000. The dormitory was formally presented to the University by Mr. Converse,